Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	EB Docket No. 04-296
Review of the Emergency Alert System	)	

COMMENTS OF TFT, INC.

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EXECUTIVE SUMMARY

TFT, Inc. hereby files comments to the Commission's Further Notice of Proposed Rulemaking (FNPRM) to review the Emergency Alert System (EAS). TFT encourages the Commission to take the primary leadership role to expedite a more comprehensive EAS by considering Common Alerting Protocol (CAP) as a top layer in a multi-layered architecture of emergency message dissemination. By not prohibiting the interaction of CAP with other protocols, the Commission will encourage development of a more comprehensive EAS into a next-generation system more quickly than adopting an entirely new system. This more comprehensive EAS, with the interaction of CAP, will provide more segments of the public with emergency information more rapidly than presently exists.

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TFT, Inc. Comments Concerning the Review of the Emergency Alert System
First Report and Order
And
Further Notice of Proposed Rulemaking

I. INTRODUCTION

1. These comments to the Commission's First Report and Order (1st R&O) and Further Notice of Proposed Rulemaking (FNPRM)[1] to examine the Review of the Emergency Alert System (EAS) are offered by TFT, Inc., a California manufacturer of FCC Certified EAS Encoder/Decoders and Decoders and are based on the company's experience in developing, producing, and refining EAS since its inception. Although there is room for expansion and improvement, EAS has already proved its value as a warning system for the public and continues to do so on a daily basis. TFT offers comments to further the value of EAS to alert the public in time of emergency.

2. TFT comments on Paragraphs 61, 63, 65, 66, 67, 77, and 80 of the First Report and Order and Further Notice of Proposed Rulemaking. TFT believes its comments on other sections would be inappropriate. Numbered paragraphs in these comments refer to the

[1] *See Review of the Emergency Alert System,* First Report and Order and Further Notice of Proposed Rulemaking, EB Docket 04-296, released November 10, 2005.

corresponding Paragraphs of the First Report and Order and Further Notice of Proposed Rulemaking.

II. COMMENTS

1. What actions [should] the Commission take to help expedite the development of a more comprehensive [EAS] system?

> 61. In the *Order* we adopt today, we realize the immediate objective of ensuring that the large and growing segments of the population who rely on digital radio and television technologies are not left without access to alerts in the event of an emergency. While the current EAS performs a critical function, we believe it could be improved. In this *Further Notice of Proposed Rulemaking (FNPRM),* we seek specific comments on what actions the Commission should take to help expedite the development of a more comprehensive system.

The Commission should continue to encourage through regulation the use of EAS as the primary means of distributing emergency messages to the public via visual and aural broadcast and cable services and allow other technologies to coexist and complement the present EAS structure. Because EAS is presently deployed for analog broadcasting services and will be deployed for digital services soon,[2] other technologies such as Common Alerting Protocol (CAP)[3] could be used as a top level layer to feed EAS (subsidiary level) messages to individual devices (lower level layers) that have access to them and to the broadcasting network simultaneously. EAS could use information in CAP messages to fulfill its function of providing emergency messages to the public. More detailed CAP information could be used by specific communications platforms to address the markets to which they connect.

2. [W]hat is the appropriate role for the Commission among the various government and industry entities that are involved in the creation of this system?

[2] *Ibid.*, Paragraph 17.
[3] Oasis, Common Alerting Protocol, v.1.1, 2005

> 63. Today's order is our first step to ensure that digital media is capable of receiving and disseminating EAS messages. We note that, in response to the *EAS NPRM*, commenters identified a number of approaches to digital alert and warning. We seek further comment on these approaches and ask what the Commission can do to facilitate the development of a more effective, comprehensive digital public alert and warning system. Specifically, what is the appropriate role for the Commission among the various government and industry entities that are involved in the creation of this system?

The Commission currently has jurisdiction over wire and radio communications.[4] EAS messages are presently disseminated via both wire and radio communications, whether they are broadcast, cable, satellite, public safety, private, wired, wireless, or internet delivered. The Commission, therefore, has the leading role in connecting emergency information providers to the public and private communications systems. Although other entities such as Department of Homeland Security and the Federal Emergency Management Agency may have the responsibility of acquiring and organizing emergency information into a comprehensive form, the Commission already has jurisdiction over all the remaining communication paths to the public.

By encouraging the use of CAP by other entities for emergency information origination and by not prohibiting the interface of CAP to EAS, the Commission will strengthen the existing and future capabilities and reliabilities of EAS. This positive interaction will permit emergency messages to move to and through the existing EAS when it is necessary to reach the public through broadcasting, cable, and satellite and around the EAS when other technologies are better able to reach other segments of the public. An emergency message in CAP structure can be translated into EAS protocol if it is necessary to reach the public via broadcasting, cable or satellite. The same emergency message could also be distributed to specific technologies such as cellular telephones and pagers without the intervening broadcast link. This architecture forms a

[4] *See* 47 U.S.C. § 151.

network with nodes that are interlinked with multiple connections that will be less likely to fail because of a single disruption.

3. What are the next generation issues for EAS?

> 65. The comments filed in response to the *EAS NPRM* reveal a multitude of technical approaches to a digital alert and warning system, from specific approaches to individual technologies to broad approaches to architecture and protocol design. Below we include a representative sample of issues for parties to address. The issues we include are representative, and do not constitute an exclusive list. Parties can – and should – comment on any next generation issues. In their comment, parties should consider what role the Commission should play in facilitating choice among these options. Are some more workable that others? Are some unworkable, either intrinsically or because they would not fit well in a system that must accommodate multiple communications platforms?

Any next generation of EAS will have development and deployment cycles. Manufacturers will require time to design and test any next generation equipment for EAS. This development can most likely be measured in months. Next generation equipment would then need to be deployed into the existing EAS base and allow time for manufacturing of new equipment, distribution of new equipment, installation of new equipment, and testing of new equipment. This deployment would most likely be measured in years. As a result the next generation of EAS equipment will probably take two to three years to be ready to accomplish any new tasks.

One example of a next generation change would be alteration of the EAS protocol.[5] Even a minor change would require years to be ready for operation in the marketplace. It, therefore, seems prudent to build upon the existing protocol rather than change it. A major change in the EAS protocol would require not only new equipment but also new testing before deployment. Major changes would be even farther away.

[5] *See* 47 C.F.R. § 11.31 EAS Protocol

An example of a minor change would be to add an alternate end-of-message code "DDDD" in addition to the authorized "NNNN".[6] The alternate end-of-message code "DDDD" could signify an end of the audio message[7] and the beginning of textual transmission. Encoder/decoders and decoders at audio facilities would interpret the alternate end-of-message "DDDD" in the same way that they now interpret "NNNN". If message re-transmission without the additional textual information is desired, the message could continue in its same form with the standard "NNNN" end-of-message code to terminate the transmission. Encoder/decoders and decoders at these same audio facilities could then decode the following text transmission and route it to a digital communications port that could be connected to many devices, such as a printer or computer. Facilities with personnel present could then audibly convey the text transmission on the facility. A more sophisticated application would be to present the textual information to a computer program with "talker" capabilities that would generate aural information. Encoder/decoders and decoders at facilities with video capabilities could decode and direct the following text transmission to other devices, such as character generators or computers, for display of detailed information about the particular message. It would not be necessary in the re-transmission of such EAS messages to contain the additional text transmission. If message re-transmission with the additional textual transmission is desired for non-public communication facilities, the message could be relayed intact and a decision about further re-transmission made at a subsequent node.

An example of a major change would be to restructure the composition and content of the EAS protocol. Existing hardware would necessarily have to be changed at great expense to all those entities subject to EAS requirements and would probably require years to implement.

[6] *See infra* 47 C.F.R. § 11.31(c)
[7] *See infra* 47 C.F.R. § 11.31(a)(3)

4. What is the appropriate system architecture/message distribution system for EAS?

> 66. *System architecture/message distribution.* Some commenters argue that the current distribution system is flawed, and that EAS messages should be distributed directly to media outlets. We seek comment on this assertion. Would such point-to-multi-point distribution deliver alerts more quickly to the public? Would it do so more efficiently? Many commenters, such as WTOP/WXTR, proposed that a satellite-based system be used. Would such a system be effective? Should it be deployed in addition to or instead of the current system? APTS proposed that the PBS satellite system offers a model for distribution of national or state and local alerts. We seek comment on the APTS proposal. We note that the PBS satellite system is an integral part of FEMA's Digital Emergency Alert System (DEAS) National Capital Region Pilot, and we expect to incorporate the results of that pilot into our record. We also seek comment on other distribution models. For example, given its inherent robustness, we believe the Internet should serve as an important role in distribution of alerts and warnings.

The overriding criterion in an EAS network architecture needs to be elimination of a single link failure that would disrupt the distribution to any level. A web architecture, on which the present EAS system was based, is the most reliable as more and more nodes are added. Because EAS messages lie in the audio spectrum,[8] any transmission path that is capable of conveying audio can be used for EAS protocol messages.

There are basically two considerations for distribution of EAS messages: national and local. The only difference between these two considerations is the distance between originator and end user. The transmission paths between the originator and end-user may be the same for both. Radio, wire line, or satellite channels could be employed for either. The Commission should encourage the use of existing public and private channels for distribution of EAS message and should not prohibit distribution by any of them. There are safeguards in the EAS protocol[9] that prevent feedback in message relaying so that multiple copies of the same message arriving at the same

[8] *Infra* 47 C.F.R. § 11.31(a)(1)
[9] *Infra* 47 C.F.R. §§ 11.31 and 11.33(a)(10)

node do not continue to be relayed. The more potential paths that exist between the message originator and the end-user, the more reliable and robust the system will be.

TFT and others, such as Kids911, have demonstrated the ability of the Internet to relay EAS messages via the Internet when no other means exist. Outlying areas, too far from high power broadcast facilities and on the fringes of satellite footprints can still avail themselves of the ubiquitous nature of the Internet to originate and receive EAS messages. Data distribution networks, such as the Internet, do not rely on the audio nature of EAS. More data, such as that contained in a CAP protocol message, could be conveyed to broadcast and cable and also other platforms that reach various segments of the public.

5. Should CAP be adopted as the common messaging protocol for any future digitally based alert system?

> 67. *Common protocols.* The National Center for Missing & Exploited Children (NCMEC) argues that emergency alerts should flow rapidly and simultaneously through all available information conduits to first responders and the public. Should such a ubiquitous distribution be a goal of a digitally-based alert system? Most commenters agree that in order for a digitally-based alert and warning system to be distributed simultaneously over multiple platforms, a common messaging protocol must be adopted. We seek comment on this assertion. SWN Communications, Inc. contends that the Common Alerting Protocol (CAP), endorsed by the PPW and many public and private organizations responsible for alerts, offers the most practical means of quickly creating an effective interface between the emergency manager and multiple emergency alert and notification systems to significantly improve national alert and warning capability. Should CAP be adopted as the common messaging protocol for any future digitally-based system? Should we require the adoption of CAP for EAS alerts? If CAP were to be adopted, would it allow simultaneous distribution to radio, television, and wireless media such as mobile telephones and PDAs? How would CAP be used to ensure uniformity of alerts across such multiple platforms? For example, if the White House were to issue a national message, how would CAP accommodate an audio message with a shorter, text-based message appropriate for a PDA screen?

CAP, because of its comprehensive nature to contain many aspects of the details of an emergency message, should be permitted as a widely distributed, common messaging protocol

and not adopted for EAS alerts. CAP messages could easily be translated into the current EAS protocol. Emergency messaging dissemination must have several layers to reach all entities including the public. With CAP at an upper level, subsequent levels, such as EAS, would have all the information necessary to construct EAS messages in their present form. A CAP message can contain many things: identification or the message originator, authentication information necessary for a particular message, the location of the emergency, the coordinates of the area effected by the emergency, an audio message, a video message, a graphic, a picture, and more. At each subsequent layer, elements in the CAP format message can be parsed for that particular layer, even EAS. For example, a picture or graphic may not be useful for aural EAS transmission, but that picture or graphic could be ignored. The audio message that could accompany a CAP message could be assembled into an EAS protocol package. Geographic coordinates could be used by public safety and private licensees and cellular telephones providers to send messages directly to units effected by the emergency.

By having a layered approach to emergency message delivery, each platform or layer could operate at its own throughput speed without being concerned with other layers. Television stations would have the advantage of providing detailed information about an emergency in the form of a visual display that would serve not only the hearing public but the hearing impaired public as well. PDAs could pick only the portions of the message that could be conveniently and efficiently displayed on those devices.

6. Could there be more uniformity between television visual text displays and the specific information in the audio portion of the EAS message?

77. Many commenters to the *EAS NPRM* argued that one of the major shortcomings of EAS is the lack of the same specific information in the visual, text display of the EAS message as that present in the EAS audio feed generated by

> the source of the message. SBE states that this discrepancy is because the visual portion of the EAS message is derived from the header code of the message, rather than from the audio feed. We seek comment as to whether EAS television crawls lack specificity due to the "disconnect" between the generic information contained in the digital heard codes and the information contained in the audio portion of the EAS message.

CAP, again, can help resolve this "disconnect". A CAP generated message could contain a field of data that could be displayed in addition to that information derived from the translation of header codes of an EAS message. This same field of data could be printed or displayed for operators in the aural services. This same field of data could be serially transmitted to other layers such as cellular telephones and PDAs. This capability would also assist the hearing impaired to receive the same specific information about the details of an emergency that the hearing public receives. The process could be done automatically without the need for additional intervening personnel to construct a field of data in real time directly from an audio transmission. The burden would be placed on the message originator to provide this information in the original CAP message.

There are numerous examples in the short history of EAS that illustrate potential harm to a significant portion of the public because the message crawled across a television screen did not contain limiting information about the emergency. In Sacramento, California, on January 2, 1997, only the second day of EAS implementation, an evacuation of a relatively small area of the county was displayed across television screens as an "immediate evacuation for Sacramento County CA." Sacramento County is approximately 500,000 in population, hundreds of thousands of which were not effected by the evacuation. Media in the area scrambled to clarify the situation after many had already felt considerable panic.

7. How can any next generation, digitally-based alert and warning system be developed in a manner that assures that persons with disabilities will be given equal access to alert and warning as other Americans?

> 80. We also seek comment on how any next-generation, digitally-based alert and warning system can be developed in a manner that assures that persons with disabilities will be given equal access to alert and warning as other Americans. Further, we seek comment on how we can incorporate the Commission's existing disability access rules into the development of a more comprehensive EAS? For example, the Commission's rules set forth operational and technical standards for telecommunications relay services (TRS), a nationwide system which permits persons with hearing and speech disabilities to have access to the telephone system. Can a digitally-based alert and warning system take advantage of this system? Further, we seek comment on whether the development of such a state-of-the-art alert and warning system would affect the obligations imposed by the Commission's rules that implement section 255 of the Act, which requires telecommunications manufacturers and service providers to make their products and services accessible to people with disabilities? To what extent can revision in the Commission's closed captioning rules be made to enhance the dissemination of emergency information? Commenters should comment on these and other issues relevant to how can we take account of those with disabilities as we develop a next generation EAS. Are there any additional steps that the Commission can take to ensure that people with disabilities are considered during the design process of such a system? For example, should the Commission adopt requirements that may be factored into the design process and, if so, what type of requirements?

Any next-generation system must have sufficient detailed information to alert all members of the public equally, including those with disabilities. One of the advantages of using CAP messages at the origination level of emergency messages is that fields of the message can be translated at lower layers into the appropriate media to reach disabled persons as well as the general public. For example, a detailed textual field with specific details related to an emergency could be crawled in both a visual television presentation and in the space normally reserved for closed-captioning. Both the hearing impaired and the hearing public would benefit. This same information could also be displayed on cellular telephones and pagers. For sight-impaired persons, detailed emergency information fields could easily be provided by program providers

through artificial speech production programs. Each segment of the population could receive emergency information via devices normally used by that segment of the population.

III. CONCLUSION

For the above-mentioned reasons, TFT encourages the Commission to take the primary leadership role in expediting a more comprehensive EAS system rather than promoting an entirely new system by permitting and not hindering the establishment or a layered approach to emergency messaging that would include CAP as a top layer for emergency message origination. This more comprehensive EAS will then develop into a next-generation system.

Respectfully submitted,

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